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After an initial glow rate of 38,550 counts/second (observed by placing the fluidic device in a Molecular Devices M5 luminometer such that the waste chamber was being interrogated), the intensity dropped to about 100 counts/second within a few seconds after adding the adsorbent material (the noise level of the luminometer was about 100 counts/second). In other words, more than 99% of the optical interference was eliminated.

The azobenzene acted in an inhibitory manner on both the enzyme and the substrate. The enzyme was inactivated by the acidity of the reagent, and likely by other mechanisms as well. The substrate was chemically modified by the azobenzene such that it is no longer a substrate for alkaline phosphatase.

While preferred embodiments of the present invention have been shown and described herein, it will be obvious to those skilled in the art that such embodiments are provided by way of example only. Numerous variations, changes, and substitutions will now occur to those skilled in the art without departing from the invention. It should be understood that various alternatives to the embodiments of the invention described herein may be employed in practicing the invention. It is intended that the following claims define the scope of the invention and that methods and structures within the scope of these claims and their equivalents be covered thereby.

What is claimed is:

1. A fluidic device having a housing and being configured to run an immunoassay for detecting an analyte in a sample of bodily fluid within said housing comprising:

(a) a sample collection unit adapted to provide a sample of bodily fluid into said fluidic device;

(b) an assay assembly in fluidic communication with said sample collection unit, said assay assembly comprising:

(i) a reagent chamber comprising at least one reagent used in said assay; and

(ii) at least one reaction site comprising a reactant that binds said analyte, wherein said assay assembly is adapted to yield a luminescent signal indicative of the presence of the analyte in the sample of bodily fluid, and wherein the at least one reagent reacts with a second reagent in said assay assembly to produce an optical signal; and

(c) a quencher assembly, in fluidic communication with but separated by a channel from said assay assembly, comprising a quenching agent that inhibits an enzymatic reaction between the at least one reagent and the second reagent in said quencher assembly, thereby reducing interference with said luminescent signal.

2. The fluidic device of claim 1, wherein said at least one reagent comprises an enzyme conjugate or an enzyme substrate.

3. The fluidic device of claim 1, wherein said quencher assembly comprises a quenching site in fluidic communication with said reaction site and the quenching agent at said quenching site.

4. The fluidic device of claim 3, wherein said quencher assembly further comprises an absorbent material.

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5. The fluidic device of claim 4, wherein said absorbent material is impregnated with said quenching agent.

6. The fluidic device of claim 4, wherein said absorbent material is selected from the group consisting of glass fiber, silica, paper, polyacrylamide gel, agarose, and agar.

7. The fluidic device of claim 4, wherein said quenching agent is a denaturing agent.

8. The fluidic device of claim 7, wherein said quenching agent is 4-amino-1,11-azobenzene-3,41-disulfonic acid.

9. The fluidic device of claim 1, wherein said assay assembly is adapted to run a chemiluminescent assay.

10. The fluidic device of claim 1, wherein said quencher assembly is adapted to substantially eliminate said interference.

11. The fluidic device of claim 3, further comprising a waste chamber, wherein said waste chamber comprises said quenching site.

12. The fluidic device of claim 1, wherein said sample of bodily fluid is blood.

13. A fluidic device for detecting an analyte in a sample, comprising:

a sample collection unit;

an assay assembly comprising at least one reaction site, said reaction site comprising a surface and immobilized thereon a reactant that forms a complex comprising the analyte;

a first reagent chamber comprising an enzyme conjugate;

a second reagent chamber comprising an enzyme substrate, wherein the enzyme substrate reacts with the enzyme conjugate to produce a chemiluminescent signal; and

fluidic channels that connect the reagent chambers with the at least one reaction site;

a quencher assembly at a separate location from the assay assembly, the quencher assembly comprising an absorbent material and a quenching agent, wherein the quenching agent inhibits the chemiluminescent reaction between the enzyme conjugate and the enzyme substrate; and

a plurality of fluidic channels that connect the sample collection unit and the quencher assembly with the assay assembly.

14. The fluidic device of claim 13, wherein said quencher assembly further comprises a waste chamber connected through a fluid channel with the assay assembly, wherein the waste chamber comprises the absorbent material.

15. The fluidic device of claim 13, wherein said absorbent material is selected from the group consisting of glass fiber, silica, paper, polyacrylamide gel, agarose, or agar.

16. The fluidic device of claim 15, wherein said quenching agent is 4-amino-1,11-azobenzene-3,41-disulfonic acid and said conjugate is an alkaline phosphatase-labeled reagent.

17. The fluidic device of claim 13, wherein said assay assembly is adapted to run an immunoassay.

18. The fluidic device of claim 1 wherein said luminescent signal is a chemiluminescent signal.

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